

## PATENT COOPERATION TREATY

From the INTERNATIONAL BUREAU

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

Date of mailing (day/month/year)
06 July 2001 (06.07.01)

To:

Commissioner  
 US Department of Commerce  
 United States Patent and Trademark  
 Office, PCT  
 2011 South Clark Place Room  
 CP2/5C24  
 Arlington, VA 22202  
 ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

International application No.
PCT/US00/25963

Applicant's or agent's file reference
NIH-05071

International filing date (day/month/year)
21 September 2000 (21.09.00)

Priority date (day/month/year)
24 September 1999 (24.09.99)

## Applicant

GOLDMAN, Carolyn, K. et al

## 1. The designated Office is hereby notified of its election made:

in the demand filed with the International Preliminary Examining Authority on:

20 April 2001 (20.04.01)

in a notice effecting later election filed with the International Bureau on:

2. The election  was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland
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Authorized officer

Pascal Piriou

Facsimile No.: (41-22) 740.14.35

Telephone No.: (41-22) 338.83.38

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
5 April 2001 (05.04.2001)

PCT

(10) International Publication Number  
WO 01/23428 A2

(51) International Patent Classification<sup>7</sup>: C07K 14/715, 16/28, A61K 38/17, 39/395, G01N 33/68

(74) Agents: MACKNIGHT, Kamrin, T. et al.; Medlen & Carroll, LLP, Suite 2200, 220 Montgomery Street, San Francisco, CA 94104 (US).

(21) International Application Number: PCT/US00/25963

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(22) International Filing Date:  
21 September 2000 (21.09.2000)

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, I.U, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

(25) Filing Language: English

Published:

— Without international search report and to be republished upon receipt of that report

(26) Publication Language: English

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette

(30) Priority Data:  
60/155,968 24 September 1999 (24.09.1999) US

(71) Applicant (for all designated States except US): THE UNITED STATES OF AMERICA, as represented by THE SECRETARY, DEPARTMENT OF HEALTH AND HUMAN SERVICES [US/US]; Office of Technology Transfer, National Institutes of Health, 6011 Executive Blvd. Suite 325, Rockville, MD 20852-3804 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): GOLDMAN, Carolyn, K. [US/US]; 14408 Gaines Avenue, Rockville, MD 20853 (US). GOLDMAN, Neil, D. [US/US]; 14408 Gaines Avenue, Rockville, MD 20853 (US). WALDMANN, Thomas, A. [US/US]; 3910 Rickover Road, Silver Spring, MD 20902 (US).

WO 01/23428 A2

(54) Title: INTERLEUKIN-2 RECEPTOR ASSOCIATED POLYPEPTIDES

(57) Abstract: The present invention relates to the identification of two polypeptides which associate with the IL-2 receptor, and are immunologically recognized by the monoclonal antibody produced from the hybridoma designated by the ATCC deposit number PTA-82. These polypeptides, designated interleukin-2 receptor associated proteins or ILRAPS, have molecular weights of about 32,000 to 34,000 daltons and 26,000 to 28,000 daltons, respectively. The invention further relates to the use of the antibody of the invention for the detection of these polypeptides and for their isolation and purification from biological samples.

(19) World Intellectual Property Organization  
International Bureau

10/08/2001

(43) International Publication Date  
5 April 2001 (05.04.2001)(10) International Publication Number  
WO 01/23428 A3

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(51) International Patent Classification: C07K 14/715, 16/28, A61K 38/17, 39,395, G01N 33/68

(74) Agents: MACKNIGHT, Kamrin, E. et al., Medlen &amp; Carroll, LLP, Suite 2200, 220 Montgomery Street, San Francisco, CA 94104 (US)

(21) International Application Number: PCT/US00/25963

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DL, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, L, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(22) International Filing Date:  
21 September 2000 (21.09.2000)

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BL, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CE, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

(25) Filing Language: English

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with international search report

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(88) Date of publication of the international search report:  
16 May 2002

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(71) Applicant (for all designated States except US): THE UNITED STATES OF AMERICA, as represented by THE SECRETARY, DEPARTMENT OF HEALTH AND HUMAN SERVICES [US/US], Office of Technology Transfer, National Institutes of Health, 6011 Executive Blvd, Suite 325, Rockville, MD 20852-3804 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): GOLDMAN, Carolyn, K. [US/US]; 14408 Gaines Avenue, Rockville, MD 20853 (US). GOLDMAN, Neil, D. [US/US]; 14408 Gaines Avenue, Rockville, MD 20853 (US). WALDMANN, Thomas, A. [US/US]; 3910 Rickover Road, Silver Spring, MD 20902 (US).

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**RECEIVED**

PATENT COOPERATION TREA...

PCT/US00/25963

APR 16 2001

**MEDLEN & CARROLL****PCT****NOTICE INFORMING THE APPLICANT OF THE COMMUNICATION OF THE INTERNATIONAL APPLICATION TO THE DESIGNATED OFFICES**

(PCT Rule 47.1(c), first sentence)

**Date of mailing (day/month/year)**

05 April 2001 (05.04.01)

From the INTERNATIONAL BUREAU

To:

MACKNIGHT, Kamrin, T.  
 Medlen & Carroll, LLP  
 Suite 2200  
 220 Montgomery Street  
 San Francisco, CA 94104  
 ETATS-UNIS D'AMERIQUE

<b>Date of mailing (day/month/year)</b> 05 April 2001 (05.04.01)		<b>IMPORTANT NOTICE</b>	
<b>Applicant's or agent's file reference</b> NIH-05071			
<b>International application No.</b> PCT/US00/25963	<b>International filing date (day/month/year)</b> 21 September 2000 (21.09.00)	<b>Priority date (day/month/year)</b> 24 September 1999 (24.09.99)	
<b>Applicant</b> THE UNITED STATES OF AMERICA, as represented by THE SECRETARY, DEPARTMENT OF HEALTH AND HUMAN SERVICES et al			

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:  
 AU, KP, KR, US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:  
 AE, AG, AL, AM, AP, AT, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EA, EE, EP, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OA, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU,  
 The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on 05 April 2001 (05.04.01) under No. WO 01/23428

**REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)**

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a **demand for international preliminary examination** must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

**REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))**

If the applicant wishes to proceed with the international application in the **national phase**, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB 301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO  
 34, chemin des Colombettes  
 1211 Geneva 20, Switzerland

Facsimile No. (41-22) 740.14.35

Authorized officer

J. Zahra

Telephone No. (41-22) 338.83.38

## PATENT COOPERATION TREATY

PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>NIH-05071</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/US 00/ 25963</b>	International filing date (day/month/year) <b>21/09/2000</b>	(Earliest) Priority Date (day/month/year) <b>24/09/1999</b>
Applicant <b>THE UNITED STATES OF AMERICA, as represented by TH</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

contained in the international application in written form.

filed together with the international application in computer readable form.

furnished subsequently to this Authority in written form.

furnished subsequently to this Authority in computer readable form.

the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2.  **Certain claims were found unsearchable** (See Box I).

3.  **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

the text is approved as submitted by the applicant.

the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

the text is approved as submitted by the applicant.

the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

as suggested by the applicant.

because the applicant failed to suggest a figure.

because this figure better characterizes the invention.

None of the figures.

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 00/25963

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C07K14/715 C07K16/28 A61K38/17 A61K39/395 G01N33/68

According to International Patent Classification (IPC) or to international classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07K A61K G01N

Documentation searched other than minimum documentation (to the extent that such documents are included in the fields searched)

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of the relevant passages	Relevant to claim No
X	EP 0 162 699 A (IMMUNEX CORP) 27 November 1985 (1985-11-27)	9,15
A	claims; examples	1-8, 10-21
	---	-/-

Further documents are listed in the continuation of the report

Patent family members are listed in annex

### Special categories of cited documents

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
- \*F\* document which may throw doubts on priority, claims or which is cited to establish the publication date of another citation or other special reasons as specified
- \*G\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the international filing date but later than the priority date claimed

- \*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- \*X\* document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- \*Y\* document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- \*S\* document member of the same patent family

Date of the actual completion of the international search

24 July 2001

Date of mailing of the international search report

06/08/2001

Name and mailing address of the ISA

European Patent Office, P.O. Box 8000, 2280 HV Rijswijk  
Netherlands  
Tel. (+31-70) 340 2040, Fax. (+31-70) 340 2040  
Fax. (+31-70) 340-3016

Authorized officer

Le Cornec, N

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 00/25963

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document with indication where appropriate of the relevant passages	Relevant to claim No
X	<p>TOSHIKAZU TAKESHITA ET AL: "An associated molecule, p64, with IL-2 receptor beta chain. Its possible involvement in the formation of the functional intermediate-Affinity IL-2 Receptor complex"</p> <p>JOURNAL OF IMMUNOLOGY., vol. 148, no. 7, 1 April 1992 (1992-04-01), pages 2154-2158, XP002169168</p> <p>THE WILLIAMS AND WILKINS CO. BALTIMORE., US</p> <p>ISSN: 0022-1767</p> <p>the whole document</p> <p>---</p>	9,15
A		1-8, 10-21
A	<p>WALDMANN T A: "MULTICHAIN INTERLEUKIN-2 RECEPTOR: A TARGET FOR IMMUNOTHERAPY IN LYMPHOMA"</p> <p>JOURNAL OF THE NATIONAL CANCER INSTITUTE, US, US DEPT. OF HEALTH, EDUCATION AND WELFARE, PUBLIC HEALTH, vol. 81, no. 12, 1989, pages 914-923, XP000915779</p> <p>ISSN: 0027-8874</p> <p>The whole document especially page 917, left column, second paragraph</p> <p>---</p>	1-21
A	<p>WO 96 21732 A (BOEHRINGER INGELHEIM INT :TANIGUCHI TADATSUGU (JP); SHIBUYA HIROSHI)</p> <p>18 July 1996 (1996-07-18)</p> <p>the whole document</p> <p>claims</p> <p>-----</p>	1-21

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 00/25963

Patent document cited in search report	Publication date	Patent family member(s)		Publication date
EP 0162699	A 27-11-1985	US	4578335 A	25-03-1986
		AT	69619 T	15-12-1991
		AU	587187 B	10-08-1989
		AU	4249685 A	28-11-1985
		CA	1339269 A	12-08-1997
		DE	3584689 A	02-01-1992
		JP	61056083 A	20-03-1986
		JP	6192294 A	12-07-1994
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		EP	0804578 A	05-11-1997
		JP	10512445 T	02-12-1998